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#DeloitteESGNow — Accounting Considerations Related to Sustainable Aviation Fuel

Background

Sustainable aviation fuel (SAF) is an alternative to traditional jet fuel used by planes today. It is derived from nonpetroleum sources such as biogenic materials (e.g., used cooking oil, oil crops, forestry waste). The standards for technical certification of SAF are based on its molecular composition and its closeness to traditional petroleum jet fuel and are regulated by ASTM International, an international standards organization formerly known as the American Society for Testing and Materials. SAF is currently available in limited quantities (approximately 16 million metric tons of SAF is expected to be produced in 2025, which is only a fraction of estimated jet fuel demand¹), and flights rarely are flown with 100 percent SAF. Instead, SAF is blended with traditional jet fuel (with blending capped by the Federal Aviation Administration [FAA] at 50 percent SAF, as noted in an FAA PowerPoint presentation). Once the SAF and traditional jet fuel are blended and recertified, the blended fuel is handled, transported, and used the same way as traditional jet fuel. This process allows the SAF to be compatible with existing aircraft engines and distribution infrastructure.

The Environmental Benefits of SAF

Unlike traditional jet fuel, which releases new incremental carbon dioxide (CO_2) into the atmosphere when burned, SAF is developed by using biomass feedstock that has previously absorbed (i.e., captured) atmospheric CO_2 . That is, SAF effectively recycles atmospheric CO_2 that had been absorbed from the atmosphere during biomass production. Accordingly, although

See the World Economic Forum's November 2020 insight report Clean Skies for Tomorrow: Sustainable Aviation Fuels as a Pathway to Net-Zero Aviation.

SAF generally emits the same amount of CO_2 as traditional jet fuel during combustion, it can achieve a better CO_2 emission balance and reduce life cycle emissions (i.e., total emissions from production, distribution, transportation, and combustion) by up to 80 percent.

Why Companies Invest in SAF

SAF is considered to be one of the most promising interim bridge solutions for reducing total emissions from air traffic and is one of the few proven sector-specific solutions available to airlines and logistics companies (hereafter referred to collectively and separately as "airlines"). There is an economic cost, however. Depending on the cost of feedstock, transportation, and blending, the price of SAF is currently three to five times that of traditional jet fuel. Consequently, it is cost prohibitive for airlines to use SAF in place of traditional jet fuel on a scaled basis. Said another way, it is very challenging for airlines to incur the additional costs of SAF if those costs cannot be offset (e.g., by tax incentives or payments from third parties).

To reduce the financial burden of buying SAF from SAF developers, airlines may enter into arrangements with third-party companies ("partners") in which the partners, which are consumers of airline or logistics services, agree to subsidize the airlines' SAF purchases. For example, a partner might agree to pay an airline all or part of the difference between the price of traditional jet fuel and the price of SAF. In exchange, the partner obtains the (theoretical) environmental attributes of the SAF and can claim the emission reduction benefit (e.g., to compensate for emissions related to the partner's business travel).² For companies whose business travel represents a significant amount of their Scope 3 emissions,³ partnering with airlines or other parties to purchase SAF emission reduction benefits might be a viable opportunity to address emission reduction goals.⁴

How the Environmental Benefits of SAF Are Claimed

Currently, there is no standardized guidance on claiming SAF emission reduction benefits, and the SAF emission reduction benefits cannot be separated from the SAF on the basis of any widely accepted guidance or registries.

In voluntary greenhouse gas (GHG) reporting markets, airlines might use SAF as a means for reducing their total emissions. However, given the lack of standardized guidance, reporting entities using SAF have been reflecting the emission reduction benefits in various ways. For example, some airlines report the SAF emission reduction separately from GHG inventory, while other airlines report the use of SAF as a Scope 1 emission and still others report only in narrative form their plan and commitment to use SAF. In addition, many companies with significant business travel needs are also looking to address emissions from such travel (e.g., Scope 3 emissions). As mentioned above, SAF is blended with traditional jet fuel. With the current airport infrastructure, the blended fuel is often shared among different airlines. That is, the SAF purchased by a particular airline might not actually be pumped into the planes operated by the purchasing airline, and a partner that subsidizes an airline's purchase of SAF cannot guarantee that the partner's employees fly on a plane that uses the same SAF. As a result, in light of the current fueling process and the inseparability of the SAF from the SAF emission reduction benefits, there is added complexity related to the tracking and, therefore, reporting of such benefits.

Currently, the Science Based Targets initiative (SBTi) has specific target-setting guidance for the aviation sector that states, in part, that "SAF may be used by consumers of aviation services to achieve science-based targets set against jet fuel-related emissions." Given the lack of standardized guidance on claiming SAF emission reduction benefits, the SBTi allows entities

² As noted below, there is currently no standardized guidance on how an entity can claim the environmental benefit of SAF emission reductions acquired by partners. See the next section for further discussion.

³ See the EPA's Web site for a discussion of Scope 1, 2, and 3 inventory guidance.

⁴ Currently, there is no agreed-upon framework or registry for claiming SAF environmental benefits as a reduction of Scope 3 emissions. However, this is an evolving area, as discussed below.

to use a book-and-claim⁵ approach until guidance on this topic is developed and finalized by the Greenhouse Gas Protocol (GHGP).⁶

Stakeholders are increasingly expecting airlines and corporate consumers of their services to develop and meet GHG emission targets. In response, airlines and their corporate customers may attempt to structure various arrangements that allow them to obtain documentation (hereafter referred to as "unofficial SAF certificates," in contrast to official SAF certificates, which do not yet exist) of the right to claim reportable environmental benefits of SAF up and down the value chain. However, because there is no widely accepted registry or acknowledged framework, there is diversity in practice related to how companies report or account for the environmental attributes of unofficial SAF certificates. It should be noted that the GHGP does not currently allow unofficial SAF certificates to be included in Scope 3 emission inventory (as a reduction).

To avoid double counting and to clarify who owns the environmental attributes of SAF, partners that subsidize airlines' purchases of SAF or buy SAF emission reduction benefits directly from SAF developers ask the airlines or SAF developers to provide them with unofficial SAF certificates. Because there are no standard templates or processes, unofficial SAF certificates issued by one vendor can look vastly different from those issued by another. Further, there is diversity in practice related to how entities use the reporting rights that come with unofficial SAF certificates. Given the lack of centralized agencies for managing and tracking the retirement of unofficial SAF certificates, entities often develop internal tracking mechanisms for "retiring" the unofficial SAF certificates.

Common Contract Structures Involving SAF

Currently, common contract structures include arrangements in which airlines buy SAF from SAF developers. Companies that are consumers of airline or logistics services might partner with airlines to buy the right to claim SAF emission reduction benefits (i.e., obtain unofficial SAF certificates) or acquire unofficial SAF certificates directly from SAF developers. Each agreement might be structured differently. One typical scenario is illustrated in the example below.

Example

Airline A enters into a contract with SAF Developer B ("Contract 1") to buy a fixed or variable volume of SAF at an agreed-upon price. Upon buying the SAF, A receives an unofficial SAF certificate from B as proof of A's purchase.

Separately, Partner Company C enters into a contract with A ("Contract 2") to buy the right to SAF emission reduction benefits from a fixed volume of SAF at an agreed-upon price that represents the difference between the price of the SAF and the price of traditional jet fuel (i.e., the SAF markup).

By entering into Contract 2, C subsidizes A's purchase of SAF in exchange for the environmental attributes of the SAF (the unofficial SAF certificate).

Accounting Considerations

There is no explicit guidance in U.S. GAAP that addresses the accounting treatment of the unofficial SAF certificates. Unlike other recognized environmental credits such as renewable

The Clean Skies for Tomorrow Sustainable Aviation Fuel Certificate (SAFc) framework being developed (see the Looking Ahead section for further discussion) is designed to be compatible with the Roundtable on Sustainable Biomaterials' (RSB's) draft Book & Claim Manual. As the RSB explains in its draft manual, the book-and-claim model is a "[c]hain-of-custody model in which the administrative record flow does not necessarily connect to the physical flow of material or product throughout the supply chain." Under this method, even if SAF is not always used on flights taken by a company's employees, the company can still claim its SAF emission reduction purchase to help meet its GHG reduction goals.

The Clean Skies for Tomorrow community will be working to support the adoption of the SAFc framework with the GHGP in accordance with the World Economic Forum's white paper Sustainable Aviation Fuel Certificate (SAFc) Emissions Accounting and Reporting Guidelines.

energy certificates (RECs),⁷ which are separable from the projects that produce the underlying energy and for which there are established trading mechanisms and markets, unofficial SAF certificates are still in the early stage of development and currently have no established trading mechanisms or markets. Typically, companies either (1) acquire unofficial SAF certificates by contracting with parties that can produce or purchase the SAF (as in the case of Contract 2 in the example above) or (2) buy SAF directly from SAF developers to get the SAF emission reduction benefits (as in the case of Contract 1 in the example above). In addition, whereas widely accepted financial accounting models have developed in practice for other environmental credits,⁸ no widely accepted financial accounting models currently exist for unofficial SAF certificates.

Accounting Considerations for Airlines9

As discussed above, airlines purchasing SAF for their own use currently have to pay a premium above the cost of traditional jet fuel. In addition, as also discussed above, an airline might enter into a cost-sharing contract with a partner under which the partner pays all or part of the premium to the airline in exchange for receiving unofficial SAF certificates from the airline that clarify that the partner has the right to the SAF emission reduction benefits attributed to the SAF.

Questions related to how an airline should account for the sale of the emission reporting rights conveyed to its partner may include the following:

• Does the purchase of SAF have two units of account?

As noted above, SAF is currently expected to be purchased at a premium above the cost of traditional jet fuel. This premium might be associated with the environmental attributes of the SAF. When the airline is able to separately sell the SAF's environmental attributes, there may be indicators of multiple elements associated with purchase of the SAF. The airline would need to evaluate whether the environmental attributes of the SAF represent an asset that is separable from the fuel itself.

FASB Concepts Statement 8, Chapter 4,¹⁰ defines an asset as "a present right of an entity to an economic benefit." An economic benefit is able to generate potential net cash inflows. From the airline's perspective, the airline is often able to realize cash inflows that result from the sale of unofficial SAF certificates.

The airline may also want to consider whether SAF environmental attributes (or unofficial SAF certificates) are legally enforceable and tradable. Environmental credits that are legally enforceable and tradable are within the scope of the FASB's current project on accounting for environmental credit programs. Legally enforceable and tradable environmental credits often have established markets or trading mechanisms, widely accepted standards (e.g., the Verified Carbon Standard, which ensures the enforceability of the environmental credits' emission reduction benefits), and broadly recognized registries that track the purchase and retirement of the environmental credits. In contrast, for unofficial SAF certificates, there are currently no established markets or trading mechanisms, widely accepted standards on claiming SAF emission reduction benefits, or broadly recognized registries.

According to the EPA's Web site, a REC "is a market-based instrument that represents the property rights to the environmental, social, and other non-power attributes of renewable electricity generation. RECs are issued when one megawatt-hour (MWh) of electricity is generated and delivered to the electricity grid from a renewable energy resource."

⁸ For additional information on accounting considerations related to environmental credits, see Deloitte's November 16, 2022, Financial Reporting Alert and December 5, 2022, Renewables Spotlight.

Occasionally, partners may also buy SAF from SAF developers. To the extent that partners do so, some of the accounting considerations discussed in this section would also apply to them. See also the Accounting Considerations for Partners Related to Their Purchases of SAF Emission Reduction Benefits section.

¹⁰ FASB Concepts Statement No. 8, Conceptual Framework for Financial Reporting — Chapter 4, Elements of Financial Statements.

 What accounting models should be considered for the purchase and sale of unofficial SAF certificates?

If the airline concludes that unofficial SAF certificates are not separate assets, the SAF might be treated in a manner similar to how other jet fuel inventory would be accounted for under ASC 330.¹¹ Correspondingly, the airline might consider whether it is simply providing its partner with a marketing benefit. This might be the case if the only benefit provided to the partner is the ability to publicly disclose the purchase of the unofficial SAF certificates. If so, the airline would also need to consider whether the payment it receives from the partner should be reported as a form of other income.

If the airline concludes that an unofficial SAF certificate is a separate asset that is sold to a partner, the airline would need to determine how to allocate the cost of the SAF acquired from the SAF developer between the unofficial SAF certificate and the underlying jet fuel. The airline would also need to assess whether the partner meets the definition of a customer under ASC 606. If the airline determines that the unofficial SAF certificate constitutes an output of its ordinary activities, it would conclude that (1) the partner meets the definition of a customer under ASC 606 and (2) the sale of the unofficial SAF certificate is therefore within the scope of ASC 606. However, if the airline concludes that the unofficial SAF certificate is not an output of its ordinary activities, it might account for the transaction as a sale of a nonfinancial asset that is within the scope of ASC 610. In such a case, the airline would record a net gain or loss on the sale of the unofficial SAF certificate (calculated as the difference between the proceeds received from the partner and the cost allocated to the unofficial SAF certificate are met.

Accounting Considerations for SAF Developers

As noted above, a SAF developer may enter into a contract with a partner or airline to sell an unofficial SAF certificate and separately sell the jet fuel to another airline. In such an arrangement, the SAF developer may take the view that it is selling two different assets, both of which may be part of the SAF developer's ordinary activities. This is because both the SAF and the unofficial SAF certificate are derived from the SAF developer's SAF production process.

In a manner similar to how an airline that concludes that its purchase of SAF represents the acquisition of two assets would need to determine how to allocate the cost of the SAF acquired between the unofficial SAF certificate and the underlying jet fuel, the SAF developer might need to determine how to allocate production costs to the SAF and the unofficial SAF certificate. The SAF developer, by analogy to ASC 330, might treat the unofficial SAF certificates as inventory, which would be subject to subsequent measurement at the lower of cost or net realizable value/market. If the SAF developer concludes that the unofficial SAF certificate is an output of its ordinary activities, a partner or airline that purchases the unofficial SAF certificate would be a customer under ASC 606, and the sale of the unofficial SAF certificate would be within the scope of ASC 606.

Accounting Considerations for Partners Related to Their Purchases of SAF Emission Reduction Benefits

When a partner acquires an unofficial SAF certificate from an airline or SAF developer, questions similar to those previously noted regarding the accounting treatment are likely to arise. That is, a partner would need to consider whether the rights that a SAF developer or airline transferred (i.e., the benefits represented by an unofficial SAF certificate) constitute an asset as defined by FASB Concepts Statement 8, Chapter 4. In making this determination, the partner would have to exercise more judgment than the SAF developer, which can often

¹¹ For titles of FASB Accounting Standards Codification (ASC) references, see Deloitte's "Titles of Topics and Subtopics in the FASB Accounting Standards Codification."

sell unofficial SAF certificates to airlines and partners, and the airline, which can often sell unofficial SAF certificates to partners. This is because (1) there is currently no established market in which unofficial SAF certificates can be readily exchanged by partners, (2) there may be no observable sales of unofficial SAF certificates from partners to other parties, and (3) the uncertainty regarding how entities can use unofficial SAF certificates to claim emission reduction benefits makes it unclear whether the partner obtains any other economic benefit from the unofficial SAF certificate it received. Consequently, there might be challenges in concluding, under current market and regulatory conditions, that the unofficial SAF certificate acquired by the partner meets the definition of an asset.

If the partner nevertheless concludes that the unofficial SAF certificate it obtained represents an asset, it might need to consider whether the asset is impaired after acquisition, or whether the benefit of the unofficial SAF certificate is immediately consumed. This is because there may be no observable manner in which the partner can derive a future economic benefit from the asset.

If the partner concludes that the unofficial SAF certificate it obtained does not represent an asset, determining the nature of the payment will be important. The partner might consider whether it is effectively incurring a form of marketing costs. That is, the benefit the partner received may be limited to the partner's ability to publicly state that it has invested in SAF. If this is the case, determining when the marketing benefit has been obtained will be important to the assessment of how and when to account for the acquisition of the unofficial SAF certificate.

Derivative Accounting Considerations for All Parties

A partner or airline may also enter into a contract to purchase the reporting rights related to either the emission reduction benefits of SAF or the SAF on a forward basis. That is, a partner might commit to subsidizing a specified volume of future SAF purchases for a specified period, or an airline might commit to purchasing a specified volume of SAF for a specified period. In such a case, the partner or airline should evaluate whether the contract is or contains a derivative.

The first step in this evaluation is to determine whether the contract meets the definition of a derivative as a whole. To be considered a derivative as a whole, the contract must have the following features:

- One or more underlyings¹² (e.g., the price of SAF).
- A specified quantity, guaranteed minimum, or otherwise determinable notional amount or payment provision.
- The ability to be net settled.
- No initial net investment, or an initial net investment that is smaller than what would be required to invest in the effective notional amount of the asset related to the contract's underlying (e.g., a direct investment in the same amount of SAF).

To determine whether the contract can be net settled, the partner or airline should consider whether (1) there are explicit terms in the contract that require or allow a net settlement or (2) the reporting rights related to either the SAF emission reduction benefits or the SAF are readily convertible to cash.

Regarding the determination of whether there is no initial net investment or a smaller initial net investment than what would be required for other types of contracts, if the partner or airline did not pay any amount to enter into the contract (or paid an amount substantially

¹² ASC 815-10-15-88 states, in part, that an underlying "is a variable that, along with either a notional amount or a payment provision, determines the settlement of a derivative instrument."

less than what would normally be paid to acquire an unofficial SAF certificate or the SAF), this criterion is likely to be met.

If the entire contract meets the definition of a derivative but qualifies for the normal purchases and normal sales (NPNS) scope exception, it would be exempt from analysis as either a derivative in its entirety or an embedded derivative. For the reporting rights or the SAF to qualify for the NPNS scope exception, the contract's terms must be consistent with the terms of the entity's normal purchases or normal sales. That is, in the case of the airline, for example, the quantity of the SAF purchased must be part of the airline's ordinary purchases in its normal course of business, and the market pricing for the SAF and the pricing in the contract must be clearly and closely related. A similar assessment applies to the partner and SAF emission reduction reporting rights. Since purchases of SAF emission reduction reporting rights are currently made for voluntary purposes and typically do not represent partners' business needs for operational purposes, we believe that the NPNS scope exception would most likely not apply to the partner. However, the assessment of whether the NPNS scope exception applies could be different for the airline since buying jet fuel is part of an airline's business need. The partner's assessment may evolve going forward.

If the partner or airline determines that the contract as a whole does not represent a derivative, it should consider whether there are any embedded derivatives that must be bifurcated from the host contract. Specifically, bifurcation is required if the contract (1) is not accounted for at fair value with changes in fair value recognized in earnings and (2) contains an embedded feature that (a) meets the definition of a derivative, (b) is not clearly and closely related to the host contract (e.g., it involves an extraneous pricing adjustment), and (c) does not qualify for a derivative scope exception.

Similar considerations related to derivative accounting apply to parties that sell SAF or SAF emission reduction reporting rights (specifically, airlines and SAF developers).

Looking Ahead

Companies have been separately transacting for the environmental attributes of SAF for only a short time. Consequently, there are no established accounting practices for SAF-related transactions under U.S. GAAP, and each transaction will most likely have unique characteristics. However, efforts toward facilitating and accounting for such transactions are under way.

In June 2021, the World Economic Forum issued a **report** on the development of the *Clean Skies for Tomorrow* SAFc framework. The purpose of this framework is to develop the concept of a SAF certificate. Now in its third of four phases of development, the framework is modeled on "Energy Attribute Certificates," which the June 2021 report describes, in part, as "a market-based mechanism for conveying the environmental attributes of a unit of renewable energy to the buyer." Under the framework, fuel producers would be permitted to sell SAF certificates separately from the fuel.

In October 2022, the World Economic Forum issued its white paper *Sustainable Aviation Fuel Certificate (SAFc) Emissions Accounting and Reporting Guidelines*, which delineates proposed sustainability accounting approaches for different stakeholders in a SAF transaction cycle. These proposals are being tested in coordination with standard setters such as the GHGP and the SBTi. Note that until the white paper's proposed guidelines are incorporated into any formal standard, they remain unauthoritative.

Building on the concept of SAF certificates, the Sustainable Aviation Buyers Alliance (SABA), an organization founded by companies committed to driving investment in and adoption of SAF, is developing a SAF certificate registry based on a book-and-claim method and certification standards. SABA is currently working with the Energy Web Foundation and the Rocky Mountain Institute (RMI), which jointly announced in November 2022 that the two

organizations were partnering with each other to create such a registry. The goal is to enable partners and airlines to pay for the emission reduction benefits of SAF even if the physical fuel is not available for their flights. This way, the environmental attributes of SAF can be officially decoupled from the physical fuel. The registry will be designed to issue, transfer, and retire SAF certificates while separately keeping track of the Scope 1 and Scope 3 benefits for different parties and avoiding any potential double counting. The SAF certificates issued by the registry will most likely need to be validated and verified against a set of standards so that the quality of the emission reductions can be ensured.

As the popularity of SAF-related transactions continues to grow, and as standard setters and regulators further address accounting and reporting considerations related to SAF and SAF certificates (i.e., the environmental benefit of SAF), companies should keep monitoring developments that may affect how such transactions should be accounted for and reported.

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